INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

Office of Air Quality **FACT SHEET**

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ToxWatch Air Monitoring Summary

What is ToxWatch?

ToxWatch is a monitoring project to collect information about toxic air pollutants. On June 1, 1999, the Office of Air Quality (OAQ) began taking samples of outdoor air in four urban areas. Air samples were collected in each location every six days over the two-year period of the study. The goals of the study were to:

- Determine levels of selected toxic air pollutants in four urban areas in Indiana.
- Determine whether levels of any of the monitored pollutants were of sufficient concern to require further assessment or action.
- Determine if the modeling projections used in federal air toxics studies could be used to reasonably predict toxic air pollutant levels in areas where monitoring is not occurring.

Why is IDEM concerned about air toxics?

Air Toxics are pollutants that, based on scientific studies, may reasonably be anticipated to cause cancer, respiratory, cardiovascular, developmental effects, reproductive dysfunction, neurological disorders, heritable gene mutations, or other serious or irreversible chronic or acute health effects in humans. Although there are no national health standards for toxic air pollutants, the US Environmental Protection Agency (US EPA) developed health benchmarks to guide regulators and the public in evaluating whether health hazards may exist.

Where were air monitors located and why?

OAQ monitored for toxic air pollutants in four areas – Elkhart County, Indianapolis (Marion County), Northwest Indiana (Lake and Porter Counties) and Evansville (Posey and Vanderburgh Counties). The areas selected had the highest reported releases of toxic air pollutants (based on US EPA Toxic Release Inventory data). Additionally, as urban areas they have large populations, the presence of industries, and significant emissions of toxic air pollutants from motor vehicles. Schools, parks and residential areas were selected as monitoring sites to obtain information on levels of toxic air pollutants in areas where people live and children play. Although each of these areas has unique characteristics, levels of toxic air pollutants are likely to be representative of air quality in most urban areas in Indiana.

How did IDEM evaluate the data?

OAQ assembled an advisory group of scientists and technical experts from academia, environmental groups, and the business community to evaluate the data and participate in the longer-term policy discussions concerning the results. US EPA provided technical review of the draft report.

First, the monitoring data were compared to US EPA's Cumulative Exposure Project (CEP) benchmarks for both cancer and noncancer health effects. The CEP benchmarks were used because they represent levels below which health effects are not expected to occur. Additional information regarding the CEP benchmarks can be found at http://www.state.in.us/idem/oam/toxwatch/health/index.html.

Second, a hazard value was calculated for each monitored pollutant. These values were then totaled for each monitoring station to allow for an assessment of whether levels of monitored toxic air pollutants presented a concern either in total or by geographic region. The relative hazard value calculation is based on a methodology used in the US EPA study of toxic risk in the Chicago area.

Finally, the monitoring data were compared to US EPA's projected values in national air toxics assessments to determine whether US EPA's projections could be used to accurately predict toxic air pollutant levels where air quality monitoring is not occurring.

What were the results?

Three toxic air pollutants – benzene, carbon tetrachloride, and chloromethane – were found at all monitoring stations at mean concentrations exceeding US EPA's CEP cancer benchmark. Several other toxic air pollutants exceeded US EPA's CEP cancer benchmark at one or more monitoring stations. These pollutants included p-dichlorobenzene, chloroform, trichloroethene and styrene. No toxic air pollutants were found to exceed US EPA's CEP noncancer benchmarks.

These findings are consistent with US EPA's national analysis. That analysis indicated that, due to elevated background concentrations, seven pollutants exceeded the CEP benchmarks all across the country. These seven pollutants included four pollutants that had high monitored concentrations in Indiana – benzene, carbon tetrachloride, chloroform and chloromethane.

While the toxic air pollutants exceeding the CEP cancer benchmarks were detected at most of the Indiana monitoring locations, there are clearly some localized influences. For example, the highest styrene levels were measured in Elkhart where there is a significant number of fiberglass and plastics manufacturers.

One important assumption was made when comparing the monitored concentrations to US EPA's CEP benchmarks. In instances when the air toxic was detected at levels below which it can be accurately measured, OAQ assumed the concentration to be ½ of the analytical method's minimum detection level. This was purposely done to provide a conservative screen for pollutants of possible concern. Further investigation will determine whether the identified pollutants present a public health concern.

What does this mean to my health?

While the department does not believe there is cause for immediate alarm, air toxic issues are serious and warrant further investigation. It is difficult to determine how much human illness or other health consequences can be directly attributed to toxic air pollutants in Indiana. Most illnesses develop over many years and can be affected by many factors. The ToxWatch Study served to determine levels of selected toxic air pollutants and to determine whether these levels were concern enough to require further assessment or action. The Study did not include an assessment of individual exposure. Therefore, it should not be construed to imply or represent any specific findings with respect to risks associated with exposure to monitored pollutants.

What is IDEM doing to reduce air toxics?

The ToxWatch data analysis summarizes the results of this monitoring study, and identifies some questions and next steps suggested by the findings. These data will be combined with other environmental data to better understand the quality of Indiana's environment and to develop strategies to improve it. OAQ will continue to monitor for these and additional air toxics. Additionally, OAQ has a variety of ongoing programs that help our efforts to reduce the public's exposure to air toxics, including monitoring activities, regulatory requirements and voluntary programs. Reducing toxic emissions continues to be an IDEM priority. The 2002 Indiana General Assembly enacted legislation that requires IDEM to develop a five-year air toxics strategy. This strategy, to be completed by late 2002, will outline priorities for toxics reduction in Indiana. The ToxWatch study will help as we identify these priorities.

What can you do to reduce air toxics?

1. Drive less. Many air toxics, like benzene, come from motor vehicle exhaust. Try carpooling, public transportation, combining trips, not using drive-thrus, and driving the speed limit.
2. Don't open burn trash or leaves.
3. When possible, avoid consumer products containing toxic compounds.

Whom do I contact if I have questions about ToxWatch?

For additional information regarding the ToxWatch project or the data analysis, please contact John Welch, Office of Air Quality, at 1.800.451.6027, ext. 3-5677 or via email at jwelch@dem.state.in.us.